

Dawood Wasif

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EXPERIENCE

Graduate Research Assistant

Aug. 2024 – Present

Trustworthy Cyberspace Lab (tClab), Virginia Tech

Arlington, VA, USA

- Designed human-in-the-loop RL coordination strategies for **Connected Autonomous Vehicle** defense, integrating human feedback into deep RL policies and achieving over 25% efficiency gains in adversarial traffic simulations.
- Collaborating with the **U.S. Army Research Laboratory (ARL)** on robust **UAV/UGV teaming**, developing multi-agent control policies that improve resilience to sensor and communication perturbations by up to 80%.
- Led research on investigating **privacy-fairness trade-offs** in **Federated Learning (FL)** for various domains.

Research Scientist (Collaborator)

Aug. 2025 – Present

Crowdception Inc.

Washington, D.C., USA

- Designed cross-platform XR clinical-intelligence stack with volumetric scene understanding on **OpenXR-compliant pipelines**, deployed and tested on Meta Quest and RayNeo, achieving above 95% object detection accuracy.
- Architected multi-agent biomedical **LLM+VLM workflow** for drug discovery, combining graph neural networks with instruction-tuned transformers to improve virtual-screening precision on 10k+ compound–target pairs.

Summer Instructor

May 2025 – Aug 2025

iD Tech Camps, Amazon HQ (DMV)

Arlington, VA, USA

- Taught **Python, Java, and AI/ML** courses to 100+ students aged 7–17 across weekly rotating cohorts.
- Gained first-hand experience working in the **Amazon HQ2 environment**, collaborating with staff and adapting to a fast-paced, innovation-driven culture, demonstrating strong alignment with Amazon’s applied research setting.

Machine Learning Engineer

July 2023 – Aug. 2024

DCube Tech.

Seattle, WA, USA

- Implemented scalable **LLM inference optimization pipelines** using quantization, and LoRA fine-tuning, achieving up to **45%** lower latency and **25%** reduction in compute cost on AWS for high-stakes decision audits.
- Engineered **spatiotemporal models** for **human action detection** on warehouse CCTV footage, with **generative AI pipelines** and **knowledge graph reasoning** to cut errors by **23%**, saving an estimated **\$300K** annually.
- Designed and implemented **multi-agent LLM architectures** to automate the supply chain and customer service operation pipelines for **enterprise e-commerce platforms**, increasing workflow automation efficiency by **35%**.

EDUCATION

Virginia Polytechnic Institute and State University

Alexandria, VA, USA

PhD in Computer Science, CGPA: 4.00/4.00

Aug. 2024 – May 2027

National University of Science and Technology

Islamabad, Pakistan

Bachelor of Science in Computer Science, CGPA: 3.81/4.00

Aug. 2019 – May 2023

SELECTED ACHIEVEMENTS AND PUBLICATIONS

- [A.1] **Best Green Tech Hack** - EcoLens, MakeUC Hackathon by IEEE@University of Cincinnati (2024).
- [A.2] **DAAD Research Fellowship** - Chair of Data Science in Earth Observation, TUM, Munich, Germany (2022).
- [A.3] **Third Place Overall & Crowd Favorite Award** - DevRev AI Hackathon by Microsoft. AutoFlow (2022).
- [P.1] Wasif et al. **Selective Counterfactual Consistency for Vertical Federated Learning**. In *ACM FAccT 2026*.
- [P.2] Wasif et al. **RESFL: Uncertainty-Aware Framework for Responsible Federated Learning**. In *ICLR 2026*.
- [P.3] Wasif et al. **Privacy–Fairness–Accuracy Trade-offs in Federated Learning**. In *AAAI/ACM AIES 2025*.
- [P.4] Wasif et al. **Explainable Federated Learning via Global–Local Attribution Alignment**. In *ICML 2026*.
- [P.5] Wasif et al. **Secure Human-Machine Interaction for Drone Swarm Control**. In *USENIX VehicleSec 2026*.
- [P.6] Wasif et al. **Risk-Aware Human-in-the-Loop for Autonomous Vehicles**. In *USENIX VehicleSec 2026*.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, Rust, R, Scala, Go, SQL, TypeScript/JavaScript (Node.js, Express.js), HTML/CSS
Software/Tools: Docker, Linux, Git, Jenkins, REST APIs, FastAPI, React, CI/CD, Jupyter, Ray, SLURM, CMake
Cloud/Big Data: AWS (SageMaker, S3, Lambda, EMR), GCP, Azure, Kubernetes, Spark, Hadoop, Databricks, Neo4j
ML/DL: PyTorch, TensorFlow, JAX, TensorRT, OpenVINO, Scikit-learn, NumPy, Pandas, Hugging Face, Transformers
LLM/AI Tools: LLMops (MLflow), FAISS, Pinecone, DSPy, RLHF, Knowledge Graphs, Elasticsearch, LangChain
Visualization/Analytics: Tableau, PowerBI, W&B, A/B Testing, DataDog, Looker, Dash, Amazon QuickSight